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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CORRIELUS, JEAN B	

ART UNIT	PAPER NUMBER
2631	8

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/678,165	ATARIUS ET AL.	
	Examiner	Art Unit	
	Jean B Corrielus	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-13* is/are allowed.

6)☒ Claim(s) *14,16-21,22 and 24-28* is/are rejected.

7)☒ Claim(s) *15 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 14, 16-22 and 24-28 is withdrawn in view of the newly discovered reference(s) to Farrow et al, US Patent No. 6,295,325; kroeger et al US patent No. 5,828,705; Westman Patent No. US 6,680,967; Valio US patent No. 6,658,048; Kobayakawa et al US Patent No. 6,064,338; Petrus et al US Application S/N US 2001/0031022 A1; and Lin et al US patent No. 5,581,579. Rejections based on the newly cited reference(s) follow.

Claim Objections

2. Claim 28, line 4, what does it mean by "shifting responsive to said coarse location"? Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 14, 17, 18, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrow et al US patent no. 6,295,325 in view of Kroeger et al US patent No. 5,828,705 and further in view of Westman Patent No. US 6,680,967.

Farrow discloses an apparatus having a decimation filter 238 that decimates a signal inherently with a decimation factor; at least one filter 248 connected to said

decimation part, said at least one filter involved in determining a first peak (location) of said signal, (note that matched filters as known in the art generate a series of peaks/spikes indication of the location of the signal). However, the reference does not teach the further limitations of a shifter for receiving the generated peak (location), a code generator for generating a code pattern and a correlator for correlating a version of said signal with the code pattern. In the same filed of endeavor, Kroeger et al teaches of a shifter 230 for receiving the generated peak (location) from a matched filter 220. It would have been obvious to one skill in the art to incorporate such a teaching in Farrow in order to remove the shift on the alternate soft decision symbols from the matched filter as taught by Kroeger see col. 4, lines 61-62. Furthermore, Westman teaches a code generator 22 for generating a code pattern and a correlator 101 for correlating a version of said signal with the code pattern. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Farrow and Kroeger so as to enhance signal recovery.

As per claim 17, Farrow et al teaches that the signal is digitized prior to decimation in the A/D converter 208.

As per claim 18, oversampled the signal at a plurality of times per chip is old well established in the art. Given that, it would have been obvious to one skill in the art at the time of the invention to incorporate such a teaching in Farrow Kroeger and Westman in order to improve signal detection.

As per claim 19, it is known in the art to generate a sampling signal based on peak (location) or correlated values. Given that, it would have been obvious to one skill

in the art to incorporate such a teaching in Farrow Kroeger and Westman in order to improve data detection accuracy.

As per claim 24, it would have been obvious to one skill in the art to implement the communication system in the CDMA environment so as to take advantage of its enhanced technological features such as collision avoidance and multiple access into the network.

5. Claims 16, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrow et al US patent no. 6,295,325 in view of Kroeger et al US patent No. 5,828,705 and further in view of Westman Patent No. US 6,680,967 and further in view of Valio US patent No. 6,658,048.

As applied to claim 14 above, Farrow, Kroeger and Westman disclose every feature of the claimed invention but do not explicitly teach the further limitations of the shifter shifting said code pattern and said version of said code is the shifted version of said code. Valio teaches the further limitations of shifter (delay 24) for shifting said code pattern 23 and said version of said code is the shifted version of said code see fig. 1. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in, Farrow, Kroeger and Westman so that the correlators can effectively correlate the receive signal with the local code.

As per claim 21, note that Valio teaches that the correlator includes a mixer and an integrator see fig. 1A. It would have been obvious to one skill in the art to incorporate

such a teaching in Farrow, Kroeger and Westman. The reason to combine would have been the same as provided in reference to claim 16.

As per claims 22, note that Valio further teaches a comparator for comparing the correlated signal and to select and output the highest value. See col. 6, lines 34-39. Given that, it would have been obvious to one skill in the art at the time of the invention to incorporate such a teaching in Farrow, Kroeger and Westman in order to recover the original signal.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrow et al US patent No. 6,295,325 in view of Kroeger et al US patent No. 5,828,705 and further in view of Westman Patent No. US 6,680,967 and further in view of Lin et al US patent No. 5,581,579.

As applied to claim 14 above, Farrow, Kroeger and Westman disclose every feature of the claimed invention but do not explicitly teach the further limitations a plurality of matched filter 116 having at least a FIR filter generating an output signal to a peak detector. Lin et al teaches a plurality of matched filter having at least a FIR filter generating an output signal to a peak detector 118. See col. 7, lines 47-59 and col. 9, lines 14-65. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Farrow, Kroeger and Westman in order to allow simultaneous estimation of both sync and frequency offset as taught by Lin et al see col. 9, lines 64-65.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrow et al US patent no. 6,295,325 in view of Kroeger et al US patent No. 5,828,705 and further in view of Westman Patent No. US 6,680,967 and further in view of Kobayakawa et al US Patent No. 6,064,338.

As applied to claim 14 above, Farrow, Kroeger and Westman disclose every feature of the claimed invention but do not explicitly teach the further limitations a comparison part and a plurality of fingers, said comparison part receiving the output of said correlator and providing a second location to one of said fingers. Kobayakawa discloses a method (fig. 3) having the steps of receiving a signal see fig. 7; determining using a set of matched filters a plurality of correlation signals (coarse location) see col. 8, lines 33-34; using elements (33 and 32) to determine to determine chip sync timing and to detect the correlation signal of maximum power (fine location) from among the correlation signals (coarse location) see col. 8, lines 37-41 and selecting (providing) a rake finger see col. 8; lines 39-42. It would have been obvious to one skill in the art at the time of the invention to incorporate such a teaching in, Farrow, Kroeger and Westman in order to process the signal path having the best quality signal so as to accurately recover the original signal.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 26 is rejected under 35 U.S.C. 102(e) as being anticipated by Kobayakawa et al US Patent No. 6,064,338.

Kobayakawa discloses a method (fig. 3) having the steps of receiving a signal see fig. 7; determining using a set of matched filters a plurality of correlation signals (coarse location) see col. 8, lines 33-34; using elements (33 and 32) to determine to determine chip sync timing and to detect the correlation signal of maximum power (fine location) from among the correlation signals (coarse location) see col. 8, lines 37-41 and selecting (providing) a rake finger see col. 8; lines 39-42.

10. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayakawa et al, US Patent No. 6,064,338 in view of Petrus et al US Application S/N US 2001/0031022 A1.

As applied to claim 26 above, Kobayakawa et al teaches every feature of the claimed invention but does not explicitly teach the decimation of an oversampled version of the received signal. In the same field of endeavor, Petrus teaches teach the decimation of an oversampled version of the received signal see paragraph 0047, last six lines. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Kobayakawa et al so as to preserved only those points that are closest in alignment to the exact symbol times see paragraph 0048.

11. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayakawa et al, US Patent No. 6,064,338 in view of Valio US patent No. 6,658,048.

As applied to claim 26 above, Kobayakawa et al discloses every feature of the claimed invention but does not explicitly teach the further limitations of the shifter shifting said code pattern and said version of said code is the shifted version of said code. Valio teaches the further limitations of shifter (delay 24) for shifting said code pattern 23 and said version of said code is the shifted version of said code see fig. 1. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in, Kobayakawa et al so that the correlators can effectively correlate the receive signal with the local code.

Allowable Subject Matter

12. Claims 1-13 are allowed.

13. Claims 15 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is (703) 305-4023. The examiner can normally be reached on Monday-Thursday from 7:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour, can be reached on (703) 306-3034.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3800.

Jean B. Corrielus
Primary Examiner
TC-2600 4/1/04